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AUTHOR Wilkins, Victoria; Chambliss, Catherine
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ABSTRACT

In training counseling students, it is increasingly important to acquaint them with the clinical research literature exploring the efficacy of particular treatments. This review of empirically supported treatments (EST's) concerning psychophysiological disorders and chronic pain is intended to facilitate the educational process. EST's, or evidence-based treatments, are based on studies recommended by the American Psychological Association (APA). To qualify for inclusion in the EST listing, research must have shown that the treatment leads to a reduction or remission of the disorder or problem at a rate higher than occurs with the passage of time or that it outperforms an alternative active treatment. Knowledge that a treatment has been shown to be efficacious should affect decisions about how one practices psychotherapy. The use of treatment guidelines and EST's in managed care psychotherapy is presented. The paper further discusses advances in chronic pain assessment and treatment as well as treatment comparisons; lists diagnostically relevant outcome measures; presents summaries of research on EST's for psychophysiological disorders and psychological treatment approaches for irritable bowel syndrome; and describes treatments and outcome measures for migraines and tension headaches. Other disorders are discussed briefly. A list of empirically supported treatments is appended. (MKA)

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Familiarizing Students with the Empirically Supported Treatment Approaches for Psychophysiological Disorders and Chronic Pain

Victoria Wilkins

Catherine Chambliss, Ph.D.

Ursinus College

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In training counseling students, it is increasingly important to acquaint them with the clinical research literature exploring the efficacy of particular treatments. This review of empirically supported treatments (ESTs) is intended to facilitate this educational process. ESTs, or evidence based treatments, are based on studies recommended by Division 12 of the American Psychological Association in their report on empirically validated psychological treatments (Chambless et al., 1996; Task Force on Promotion and Dissemination of Psychological Procedure, 1995). The original listing was recently expanded to include 57 treatments that had withstood the test of careful empirical scrutiny (Chambless & Hollon, 1998). Developing specific psychotherapeutic techniques for homogeneous populations is a current focus of psychotherapy research (Orlinsky & Howard, 1986).

To qualify for inclusion in the EST listing, for each treatment research must have shown that it leads to a reduction or remission of the disorder or problem at a rate higher than occurs with the passage of time (efficacious) or that it outperforms an alternative active treatment (efficacious and

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specific). Knowledge that a treatment has been shown to be efficacious should affect decisions about how one practices psychotherapy.

Using Treatment Guidelines

Clinical practice guidelines based on laboratory research, outcome data, and cost containment needs are becoming increasingly common. Their use raises several serious practical and ethical questions. How can guidelines be customized to meet the specific needs of particular clients? How can we tailor treatments without compromising their established efficacy? How can clinicians preserve their own creativity and spontaneity while adhering to treatment guidelines? How can clinicians stay attuned to the idiosyncracies of individual cases while employing treatment protocols? How can clinicians avoid becoming distracted and myopic in using treatment guidelines? How can clinicians accommodate the need to provide "partial" treatment?

While the guidance offered by these treatment literatures is invaluable, it is not enough simply to memorize a treatment protocol or manual and deliver it when we meet someone with the appropriate diagnosis. The need to customize the ESTS in light of individual learning styles and preferences, the existence of codiagnoses, and other mediating variables, will help to keep psychotherapy part "art" for some time to come!

Using ESTS in Making Managed Care Psychotherapy Work

Managed care providers are expected to adhere to treatment guidelines described in manuals provided by individual managed care companies. One of the frustrations associated with doing managed care work involves the lack of uniformity that exists across these guides. While all are derived from a common research literature on treatment efficacy, companies have worked independently to craft distinctive guidelines, which are considered proprietary. This restricts free and widespread access to this information, and has stymied development of consensual "industry standard" guidelines.

Although initially you may feel baffled by the need to comply with disparate instructions about how to proceed with clients carrying a particular diagnosis, as you review the different manuals, you will notice considerable overlap. To simplify your clinical work, you may wish to focus on mastering the conclusions from the empirical treatment literature. This body of research forms the basis for all the separate clinical manuals managed care companies have developed. If you can provide a case reviewer with the research basis for your treatment plan and process, minor deviations from the specific guidelines will generally be accommodated.

The following sections organize the treatment efficacy literature according to diagnostic category. Dually diagnosed clients will require some creative merging of techniques, unless

their particular combination of problems has been specifically addressed in the literature.

Studies selected for summary were taken from the national listing of Empirically Validated Treatments developed by the American Psychological Association. The criteria for inclusion in the APA sample is described in detail elsewhere, but priority was given to carefully controlled, double-blind, randomized studies with adequate sample size and measures to assure high treatment fidelity.

Most of the controlled studies of psychological treatments have been conducted on behavioral or cognitive approaches, although recently there has been increased use of clinical trials methodologies in tests of other treatment approaches, such as those based on psychodynamic theory.

Behavioral Medicine

Many researchers have been devoted to exploring the relationship between psychological and health variables. Studies have shown the beneficial effects of disclosure on the functioning of the immune system (Pennebaker, Kiecolt-Glaser, & Glaser, 1988), and how perceived control and optimism increases longevity (Rodin & Langer, 1977; Seligman, 1990).

Chronic Pain

The first behavioral approach in treating chronic pain was designed to modify maladaptive pain behaviors by analyzing and changing social and environmental contingencies (Keefe, Dunsmore, & Burnett, 1992). This approach was based on operant conditioning principles (Fordyce, 1976).

In contrast, the cognitive-behavioral approach focuses on behavior, cognitive, and affective elements of the experience of pain. Based on recent theoretical developments in the areas of cognitive therapy and behavioral therapy, cognitive-behavioral therapy is designed to do two main things (Turk, Meichenbaum, & Genest, 1983). First, it aims to teach patients about the relationship of pain to cognitive, affective, and physiological variables, in order to enhance clients' perception of their ability to control pain. Second, the therapy tries to teach skills that enable patients to change the way that they cope with their pain.

Keefe et al (1992) reviewed studies that examined the social context of pain, the relationship of chronic pain to depression, cognitive variables that affect pain, and comprehensive assessment measures. They also evaluated treatment outcome studies that compared the effects of behavioral treatment with control conditions or compared two different behavioral treatments, and studies exploring strategies for the prevention of chronic pain.

Advances in Chronic Pain Assessment

The behavioral approach to chronic pain is derived from the belief that pain occurs in a social context characterized by complex reciprocal influences (Fordyce, 1976). The behavior of a chronic pain patient is shaped and reinforced by others, and also influences and shapes the behavior of others. As a result, therapists typically urge spouse and family members to participate in treatment.

The major goal of behavioral therapy is to prompt and reinforce adaptive "well" behaviors, while minimizing attention given to pain behavior (Keefe, et al., 1992). A study done by Janison and Virtus (1990) focused on the patients' perceptions of their social support. They found that chronic pain patients who report high levels of social support adapt to pain more effectively; they are more active and report lower levels of distress. When patients and/or their spouses were asked about their marital relationship, Flor, Turk, and Scholz (1987) found that both the chronic pain patients and their spouses generally rate marital satisfaction low.

Data suggests that a spouse's personality traits can be predictive of the outcome of treatment (Ahern, Slater, Adams, & Follick, 1991). Flor, Kerns, & Turk (1987) found that patients whose spouses ignored or responded negatively to their pain behaviors had higher activity levels, Patients whose spouses were overly solicitous had higher levels of pain and lower levels of activity.

Data gathered from videotaped interactions of couples performing routine household activities (Romano, Turner, Friedman, et al, 1991) supported the operant model of patient-spouse interaction. Patients showed higher levels of verbal and nonverbal pain behavior than controls, and patients' spouses showed more solicitous and less facilitative behavior (praise and compliments) than their peers.

Recent surveys indicate that most behavioral clinicians consider themselves to have a cognitive-behavioral orientation (Craighead, 1990). The analysis of cognitive variables helps provide an understanding of pain, affective distress, behavior, and treatment implications. Patients often enter therapy with false beliefs about the cause of their pain and what their future holds. Patients who enter therapy believing that their pain was going to remain chronic often fail to comply with both their physical therapy and behavioral therapy treatments.

There has been a need to establish the prevalence of depression in chronic pain patients. Almost all of the studies done on the relationship between pain and depression are correlational. Chronic pain patients who are more depressed rate their pain as more severe (Parmelee, Katz, & Lawton, 1991). Using the criteria stated in the DSM (APA, 1980), Turner and Romano (1984) determined that thirty percent of a sample of chronic pain patients could be classified as depressed. Furthermore, they concluded that the incidence of depression varies with age; younger patients are more apt to be depressed.A longitudinal study of rheumatoid arthritis patients by Brown

(1990) concluded that chronic pain is a cause rather than a consequence of depression.

Studies show that antidepressants can reduce pain without a corresponding decrease in depression (France, Houpt, & Ellinwood, 1984). This finding suggests that there may be a biological mechanism linking chronic pain and depression, most likely involving biogenic amines such as serotonin or norepinephrine.

Advances of Chronic Pain Treatment

Treatment methods, such as social reinforcement, time-contingent medications, relaxation training, and imagery instruction, have enabled many chronic pain patients to regain a more independent lifestyle. Both behavioral and cognitive-behavioral treatments have been found useful in managing chronic pain. However, to enhance the effectiveness of these treatments, the active ingredients need to be identified even more specifically.

Phillips (1987) tested the efficacy of a cognitive-behavioral treatment package that included relaxation training, exercise, activity pacing, and cognitive interventions, by comparing it with a waiting list control condition. Patients receiving cognitive-behavioral treatment showed highly significant changes in mood, affective reactions to pain, self-efficacy, avoidance behavior drug intake, and exercise capacity. At a 12-month follow-up, these treatment gains had either been maintained or actually increased. No significant changes were observed in patients in the waiting list control group.

Engstrom (1983) found that patients receiving a placebo failed to exhibit treatment gains during the span of the study, while patients receiving cognitive-behavioral treatment showed significant reduction in pain and increased internal locus of control. In another experiment, Heinrich, Cohen, Naliboff, Collins, & Bonebakker (1985) compared physical therapy and behavior therapy. They found that both treatments produced improvements in pain and psychosocial function. While physical therapy produced more improvement in back control skills, behavior therapy reduced psychological distress more.

Chronic Pain Treatment Comparisons

Three studies compared operant therapy and cognitive-behavioral treatment for chronic pain. Kerns, Turk, Holzman, & Rudy (1986) studied operant treatment emphasizing weekly behavioral contracting and cognitive-behavioral intervention emphasizing training in coping skills. They found that both reduced the use of health care, however only the cognitive-behavioral patients showed improvement on self-report measures of pain, psychological distress, instrumental activities, and dependency.

In another study, Nicholas, Wilson, & Goyen (1991), found that patients exposed to operant therapy and cognitive-behavioral

intervention showed initial improvements in pain, pain-related cognitive distortions, and functional impairments. The operant intervention group showed more initial improvement, although both groups were unable to maintain results at the follow-up.

Turner and Clancy (1988) conducted a methodologically rigorous study comparing operant methods incorporating aerobic exercise and cognitive-behavioral treatments for lower back pain. Their study had a large sample, used videotape observation, and included a twelve month follow-up period. Patients in both groups showed significant reduction in physical and psychosocial disability both immediately after treatment and at follow-up. Only the rate of improvement differed across treatment conditions: the operant group showed greater initial improvement, while the cognitive-behavioral group changed more steadily.

Discussion

Physicians and health professionals find that behavioral and cognitive behavioral assessments help us to understand individual differences about how patients adjust to chronic pain. Quantifying reports about pain is difficult, although a multidimensional scale has been proposed (Clark, 1987). Analyzing daily variations in pain and behavior patterns, as well as psychophysiological assessments for analyzing muscular responses that contribute to pain, also requires more research. Epidemiological research can give new understanding about the natural history of chronic pain conditions.

Diagnostically Relevant Outcome Measures

CES-D Center for Epidemiological Studies Depression Scale

Chronic Illness Problem Inventory (Kames, Naliboff, Heinrich, & Coscarelli Schog,1984)
Assesses functional deficits due to chronic pain
65 items divided into 19 subscales

Coping Strategies Questionnaire (Rosenstiel & Keefe, 1983)
Assesses the use and perceived effectiveness of a variety of coping strategies

LISREL-V (Joreskog & Sorbom, 1981)

National Health and Nutrition Examination Survey
Large-scale population based survey

Pain beliefs and Perceptions Inventory (Williams & Thorn, 1989)

Research Diagnostic Criteria (Atkinson, Ingram, Kremor, & Saccuzzo, 1986)

Sickness Impact Profile (Bergner et al, 1976)

Behaviorally based measure
Assesses dysfunctional behavior related to illness
12 scales
Appropriate for behavioral treatment studies

Survey of Pain Attitudes (Jensen, Karoly, & Huger, 1987)

Vanderbilt Pain Management Inventory (Brown & Nicassio, 1987)
Assesses a patient's use of active coping versus passive coping strategies

Videotape Assessment Protocol (Schwartz, DeGood, & Shutty, 1985)
Presents information about pain management
Assesses beliefs about usefulness of common pain management techniques

Ways of Coping checklist (Folkman & Lazarus, 1980)
Asks patients to identify specific pain or nonspecific pain stressor and to indicate the use of problem -focused or emotional-focused coping strategies

West Haven Yale Multidimensional Pain Inventory (Kerns, Turk, & Rudy, 1985)
Assesses chronic pain from cognitive-behavioral perspective
Three parts

Summaries of Research on ESTs for Chronic Pain

Nicholas, M. K., Wilson, P. H., & Goyen, J. (1991). Operant-behavioral and cognitive-behavioral treatment for chronic low back pain. Behaviour Research and Therapy, 29, 225-238.

Nicholas, Wilson, and Goyen (1991) investigated six treatments: cognitive treatment, cognitive treatment and relaxation training, behavioral treatment, behavioral treatment and relaxation treatment, attention-control condition, and no-attention control condition. CT (Turk, Meichenbaum, and Genest, 1983) taught how to identify non-coping cognitions and how to replace with coping self-statements (e.g., distraction and imagery strategies). BT (Fordyce, 1976; Turk et al. 1983) emphasized the need for long-term behavioral goals but de-emphasized the medication. RT was applied to these techniques, adding relaxation techniques,and ways to reduce tension and irritability. AC was an additional program with a psychologist that allowed the subjects to discus their problems with people who have similar conditions. NAC did not attend the psychologist, but only completed the physiotherapy program. It was found that the BT produced a significant improvement over the CT, while the RT produced little effect on either treatment. AC, psychological/ physiotherapy, had a great impact on those who attended compared to the NAC.

Parker, J. C., Frank, R. G., Beck, N. C., Smarr, K. L., Buescher, K. L., Phillips, L. R., Smith, E. I., Anderson, S. K., & Walker, S. E. (1988). Pain management in rheumatoid arthritis patients: A cognitive-behavioral approach. Arthritis and Rheumatism, 31, 593-601.

Parker, Frank, Beck, Smarrr, Buescher, Phillips, Smith, Anderson, and Walker (1988) compared cognitive-behavioral (CB) therapy, attention-placebo (AP), and a control group in the treatment of rheumatoid arthritis pain. The CB method (Karol, Doerfler, Parker, & Armentrout, 1981; Turk, Meichenbaum, & Genest, 1983) entailed problem-solving techniques, relaxation training, strategies for attention diversion, family dynamics training, and communication training (Melzack & Wall, 1965; Lorig & Fries, 1980; D'Zurilla & Goldfried, 1971). The (AP) method included films, written materials, small group discussion, and support group sessions. The control group were given normal care from a rheumatology team. The results indicated that the CB group significantly increased their use of coping strategies and experienced more confidence in managing their pain.

Keefe, F. J., Caldwell, D. S., Williams, D. A., Gil, K. M., Mitchell, D., Robertson, C., Martinez, S., Nunley, J., Beckham, J. C., & Helms, M. (1990a). Pain coping skills training in the management of osteoarthritic knee pain: A comparative study. Behavior Therapy, 21, 49-62.

Keefe, Caldwell, Williams, Gil, Mitchell, Robertson, Martinez, Nunley, Backham, Crisson and Helms (1990a) compared pain coping skills training, arthritis education, and a standard care control in the treatment of osteoarthritic knee pain. The coping skills method (Turk, Meichenbaum, & Genest, 1983; Turner & Clancy, 1988; Melzack & Wall, 1965) included relaxation (Surwit, 1979), imagery, distraction techniques, activity cycling (Gil, Ross, & Keefe, 1988), pleasant activity scheduling (Lewinsohn, 1975), and cognitive restructuring (Beck, Rush, Shaw, & Emery, 1979). The arthritis education method consisted of lecture and discussion on the nature of osteoarthritis, treatment, exercise, and maintenance of mobility and function (Lorig, 1982). The standard care method received neither of the above treatment methods, but did continue with their normal osteoarthritis care. The results showed that patients in the coping skills condition experienced lower levels of pain and psychological disability than in the other two conditions.

Keefe, F. J., Caldwell, D. S., Williams, D. A., Gil, K. M., Mitchell, D., Robertson, C., Martinez, S., Nunley, J., Beckham, J. C., & Helms, M. (1990b). Pain coping skills training in the management of osteoarthritic knee pain II:

Follow-up results. Behavior Therapy, 21, 435-447.

Keefe, Cladwell, Williams, Gil, Mitchell, Robertson, Martinez, Nunley, Beckham, and Helms (1990b) examined the follow-up data of the comparison of pain coping skills training, arthritis education, and standard care in the treatment of osteoarthritic knee pain. After six months, the follow-up results showed that those patients who received the coping skills training had significantly lower levels of psychological and physical disability than the arthritis education patients and marginally lower levels of psychological disability and physical disability than standard care patients.

Turner, J. A., & Clancy, S. (1988). Comparison of operant behavioral and cognitive-behavioral group treatment for chronic low back pain. Journal of Consulting and Clinical Psychology, 56, 261-266.

Turner and Clancy (1988) compared operant behavioral treatment (OB), cognitive-behavioral treatment (CB), and a wait-list control for the treatment of chronic low back pain. The operant behavioral method entailed awareness of social reinforcers in behavior management (Fordyce, 1976), communication training, and regular aerobic walking/jogging (Fordyce, 1976). The cognitive-behavioral method consisted of training in systematic progressive muscle relaxation (Bernstein & Borkovec, 1973), imagery (Turk, Meichenbaum, & Genest, 1983), homework, identification of maladaptive thoughts, generation of adaptive thoughts, and recording of behavior and responses (Beck, Rush, Shaw, & Emery, 1979). The results showed decreased physical and psychosocial disability in both treatment conditions. Operant behavioral group members exhibited greater improvement during treatment than did (CB) group members; however, as improvement in OB members leveled off at follow-ups, CB members showed continued improvement at over the 12 months after treatment. Both groups were improved significantly, without significant differences between groups, at the 12-month follow-up.

Turner, J. A., Clancy, S., McQuade, K. J., Cardenas, D. D. (1990). Effectiveness of behavioral therapy for chronic low back pain. Journal of Consulting and Clinical Psychology, 58, 573-579.

Turner, Clancy, McQuade, and Cardenas (1990) compared group behavioral therapy plus aerobic exercise, behavioral therapy only, aerobic exercise only, and a wait-list control in the treatment of chronic low back pain. The behavioral method included social reinforcers, communication training (McKay, Davis, & Fanning, 1983), group discussion, role playing, feedback, and homework. The exercise method consisted of fast walking/slow jogging (Cady, Bischoff, O'Connell, Thomas, & Allan, 1979; Fordyce, 1976). The combination method entailed the

behavioral method followed by the exercise method. The results indicated that participants in the combination method improved significantly more during treatment than the other conditions. At follow-up, however, improvement was significant for all treatment groups, with no evident differences between groups.

Newton-John, T. R. O., Spence, S. H., & Schotte, D. (1995). Cognitive-behavioral therapy versus EMG biofeedback in the treatment of chronic low back pain. Behaviour Research and Therapy, 33, 691-697.

Newton-John, Spence, and Schotte (1995) compared cognitive behavior therapy (CBT), electromyographic biofeedback (EMGBF) and a wait- list control in the treatment of chronic low back pain. The CBT method (Nicholas et al., 1992; Spence, 1989; Turk, Michenbaum, & Genest, 1983) entailed autogenic relaxation, controlled breathing, attention diversion, pain relabelling, as well as identifying, challenging, and replacing maladaptive pain-related cognitions (Beck, Rush, Shaw, & Emery, 1979). The EMGBF method (Flor & Birbaumer, 1991) consisted of diaphragmatic breathing exercises and placement of electrodes on the erector spinae muscle groups (Basmajian & Blumenstein, 1983). The results showed that, at post-treatment and at six months, both treatment methods elicited significant improvement in comparison to the wait-list control. No significant difference between the two treatments was found at either time.

Flor, H., & Birbaumer, N. (1993). Comparison of the efficacy of electromyographic biofeedback, cognitive-behavioral therapy, and conservative medical interventions in the treatment of chronic musculoskeletal pain. Journal of Consulting and Clinical Psychology, 61, 653-658.

Flor and Birbaumer (1993) investigated three treatments: electromyographic biofeedback, cognitive-behavioral therapy, and conservative medical treatment. The biofeedback method consisted of EMG feedback from the site of the pain. The C-B method entailed progressive muscle relaxation, pain- and tension-eliciting events identification using relaxation exercises and problem solving for management, and pain-coping skills (e.g., positive self-statements and distraction). The MED method consisted of: prescription of analgesic medication, tranquilizers, or muscle relaxants; physical therapy and massage; balneological treatments, chiropractic manipulation, nerve blocks, and spa treatment; also bite plates, dental correction, and exercises for grinding and clenching reduction. Flor and Birbaumer found that, while subjects in all categories showed improvement, those in the EMG biofeedback group were the most improved.

Summaries of Research on ESTs for PSYCHOPHYSIOLOGICAL DISORDERS

Irritable Bowel Syndrome

A common gastrointestinal disorder called Irritable Bowel Syndrome (IBS) involves abdominal pain and change in bowel habit (either diarrhea or constipation) occurring in the absence of abnormalities on the appropriate physical and laboratory investigations (Latimer, 1983). It is estimated 8% (Whitehead, Winget, Fredoravicius, Wooley, & Blackwell, 1982) to 17% (Drossman, Sandler, McKee, & Lovitz, 1982) of the general population are stricken with IBS, although many people do not report GI problems because of embarrassment.

IBS presents diagnostic challenges, because it looks and feels like many other GI problems. Whitehead and Schuster (1985) suggest a requirement of positive evidence for the association of abdominal pain with psychological distress such as anxiety or depression (p. 164).

The usual treatment of IBS patients includes supplementing the diet with fiber and bulk agents and drugs including anticholinergics or psychotropics, primarily amitriptyline. These all have been proven effective in placebo-controlled and double-blind trials (see Heaton, 1985, for summary on dietary fiber and Holdsworth, 1985, for summary on drugs).

Most clinicians believe that patients who suffer from IBS are psychologically impaired or disturbed (Blanchard et al, 1987). Many studies have been conducted to evaluate IBS, but there has been little agreement of the exact nature of the problem and what is the best way to evaluate it. Blanchard, Schwartz, and Radnitz (1987) has reviewed a variety of comparative studies with patients with IBS, including ten studies contrasting characteristics of IBS patients with those of the general population. Numerous studies verify that IBS patients are more psychologically disturbed than the normal population Blanchard et al, 1987). In these comparisons, the most frequently found differences involve reports of anxiety, depression, and hysteria or somatoform disorder. However, no specific IBS personality type has been identified. Whitehead and Schuster (1985) suggest a need for a more uniform diagnostic criteria. This may have resolved some of the inconsistencies across studies. They also suggest identifying subgroups of IBS patients in future studies. Treatment studies have been done with both uncontrolled single-groups and controlled groups. The uncontrolled studies are promising, but they have yielded widely variable results. Controlled assessments of treatment efficacy are important, because of the reportedly high level of placebo response (67%) among IBS patients in drug trials (Whitehead & Schuster, 1985).

Psychological Treatment Approaches

Psychological treatment has been found to be better than routine medical treatment according to global outcome measures (Giles, 1978; Svedlund et al., 1983), although results have been equivocal in studies using symptom diaries (Bennett & Wilkinson, 1985). Psychological treatment involving techniques such as relaxation training and elements of cognitive therapy or biofeedback-assisted relaxation are superior for treating patients with IBS; and simultaneous improvements in disturbed psychological states such as anxiety have been found in patients receiving psychological treatment (Blanchard et al., 1987).

Blanchard et al (1987) discuss success with a treatment program composed of five elements. One is education about the GI tract and the range of normal bowel functioning. The second is progressive muscle relaxation, including the use of cues and recall. The third is thermal biofeedback focusing on relaxation strategies. The fourth is cognitive therapy focusing on coping with stress. The last is daily monitoring for GI symptoms (i.e., keeping a GI Symptom Diary).

Of four patients treated in individual A-B single-subject designs, two greatly improved (92% and 95% reduction of symptoms, respectively) and two showed only minimal change (Blanchard et al., 1987). In an examination of 19 patients randomly assigned to either the multicomponent treatment program or a symptom-monitoring control condition, those receiving psychological treatment fared significantly better (60% were clinically improved) than those in the control group (only 11% improved). One-year follow-up data showed that 57% of those treated psychologically continued to show clinical improvement (symptom reduction of at least 50%). Gerardi, Blanchard, & Schwarz (1986) compared the multicomponent program given on a individual basis to an attention-placebo control, and a symptom-monitoring control. Their results showed that the active treatment was better than both of the controls. Blanchard & Schwarz (in press) successfully adapted the multicomponents to a small group (3-6 IBS patients) format.

There have other appropriately controlled studies of the psychological treatment of IBS patients. Svedlund, Sjodin, Ottosson, and Dotevall (1983) report after having 51 patients receive routine medical care (dietary fiber, drugs, or a combination of the two), and 50 patients receive treatment of medical care and short-term dynamic psychotherapy for up to 3 months, that the patients who had adjunctive psychotherapy demonstrated significantly greater reductions of symptoms and pain than the control group. Failure to make use of detailed symptom diaries may have inflated the effects of treatment in the Svedlund et al (1983) study, but the comparison still favored inclusion of psychological treatment.

In another study, Whorwell, Prior, and Faragher (1984) assigned 39 treatment-resistant (an average history of failure on six treatments) to three months (7 sessions) to a treatment group

receiving hypnotherapy for relaxation and bowel motility control or a group receiving supportive psychotherapy plus a medication placebo. Differences in GI Symptom Diaries supported the superiority of the focused hypnotherapy treatment.

Diagnostically Relevant Outcome Measures

The GI Daily Symptom Diary

This instrument provides a conservative estimate of the treatment effectiveness. It enables patients to rate their problems as the treatment progresses, rather than at the end of the treatment. These studies indicate that Irritable Bowel Syndrome is mildly to moderately psychologically distressing. There is a definite level of depression and anxiety associated with IBS. A patient with IBS is most likely a person with a chronic illness and chronic anxiety.

Crown Crisp Experimental Index
Middlesex Hospital Questionnaire
Minnesota Multiphasic Personality Inventory
Hopkins Symptom Checklist
Symptom Distress Checklist
Yatabe-Guilford Personality Inventory
Beth Isreal Alexithymia Questionnaire
Zung's Depression Scale
Lie Scale of the Eysenck Personality Inventory

Payne, A., & Blanchard, E. B. (1995). A controlled comparison of cognitive therapy and self-help support groups in the treatment of irritable bowel syndrome. Journal of Consulting and Clinical Psychology, 63, 779-786.

Payne and Blanchard (1995) compared individualized cognitive treatment (CT), self-help support group (SG), and a symptom-monitoring wait-list control in the treatment of irritable bowel syndrome. The CT method consisted of identifying cognitive errors, monitoring stressful thoughts and feelings, recording antecedents and consequences of stressful events, and classifying automatic thoughts into categories of distortion (Greene & Blanchard, 1994). The SG condition entailed weekly group sessions, open discussions, and information-gathering from other group members and the therapist. The results indicated that the CT group was superior to both the SG group and the wait-list control in reduction of symptoms and scores on depression and anxiety measures.

Lynch, P. M., & Zamble, E. (1989). A controlled behavioral treatment study of irritable bowel syndrome. Behavior Therapy, 20, 509-523.

Lynch and Zamble (1989) compared behavioral treatment for irritable bowel syndrome directly after assessment with the same

behavioral treatment after a period of three months and a second assessment. Treatment consisted of relaxation (Bernstein & Borkovec, 1973), meditation, stress inoculation (Meichenbaum, 1985), control of stress-producing cognitions (Burns, 1980), and assertion training (Lange & Jakubowski, 1976). The results showed that, during treatment, the immediate treatment group improved significantly more than the waiting group. Because all subjects received treatment, the efficacy of this treatment could be confirmed by within-subject comparisons of pretreatment and post-treatment; there was an improving trend.

Headache

Migraine

Over the past 25 years, psychological intervention programs have proved to be highly successful in the treatment of pediatric migraine, with thermal biofeedback (TBF) being one of the most efficacious types of treatment (Hermann, Kim, & Blanchard, 1995). In a study by Hermann, Blanchard, and Flor (1997), age emerged as a highly significant predictor, with younger children experiencing the greatest reduction in HA activity.

Blanchard, E. B., Andrasik, F., Ahles, T. A., Teders, S. J., & O'Keefe, D. (1980). Migraine and tension headache: A meta-analytic review. Behavior Therapy, 11, 613-631.

Blanchard, Andrasik, Ahles, Teders, and O'Keefe (1980) conducted a meta-analytic review to determine the relative efficacy of the two chief behavioral treatment procedures for headaches, biofeedback training and relaxation training.

Many different relaxation methods were combined for this analysis, including passive, meditative forms of relaxation, like Benson's (1975) Relaxation Response, shortened forms of Jacobson's (1924) progressive relaxation, and variants of both.

There has been a suggestion that all apparent biofeedback and relaxation training effects are actually only placebo effects. Therefore, consideration of double-blind, placebo-controlled trials is of special importance. The Blanchard, Andrasik, Ahles, Teders, and O'Keefe (1980) meta-analysis concluded that behavioral treatment of headache is more effective than both medication and psychological placebos for the treatment of tension headaches, and superior to medication placebo for migraine headaches. The evidence clearly indicates that monitoring of headaches alone is generally ineffective in reducing tension headaches, but there is not enough information to generalize this finding to migraine headaches as well. The medication and psychological placebos produced virtually equal results for patients being treated for tension headaches.

Tension Headaches

Gray et al. (1980) reported a comparison of frontal EMG biofeedback and abbreviated progressive relaxation for people with tension headaches. These subjects receiving relaxation training had significantly less intense headaches at post-treatment.

Migraines

Temperature biofeedback, temperature biofeedback with autogenic training, relaxation training, and medication placebo treatments were all superior to the medication placebo for migraine headaches. According to Keppel (1973) there was no difference detected across these three treatments. Attfield and Peck (1979) compared abbreviated progressive relaxation training to thermal biofeedback and also detected no significant outcome differences between conditions.

Conclusion

Frontal EMG biofeedback, relaxation training alone, or a combination of the two all yielded comparable results in the treatment of tension headaches. For the treatment of migraine headaches, both relaxation training and temperature biofeedback training produced similar improvement, although combining the two generated a slight advantage. Both poorly and well-controlled studies alike yield similar results: no major differences between biofeedback and relaxation treatments for headaches (Blanchard et al., 1980).

Silver and Blanchard (1978) have speculated that all behavioral treatments for headache may work through the elicitation of relaxation. This notion has particular face validity in the case of tension headaches. A proposed neurophysiological model of migraine headaches offers an additional way to explain how relaxation is a common factor to the treatment (Mathew, 1979). Sovak, Kunzel, Sternbach, and Dalessio (1978) obtained experimental evidence that temperature biofeedback leads to a reduction of sympathetic outflow, but no cerebrovascular changes have been detected by the regional cerebral blood flow techniques (Mathew, Largen, Claghorn, Dobbins, & Meyer, 1978).

The Blanchard, Andrasik, Ahles, Teders, and O'Keefe (1980) analysis omitted a few other promising treatment approaches. Holroyd, Andrasik, and Westbrook (1977) compared cognitive stress management for tension headache to frontal EMG biofeedback. They found the cognitive stress management was more effective than the EMG biofeedback. In a two year follow-up the subjects sustained improvements, and the results were replicated in a second study.

Friar and Beatty (1976) and Bild and Adams (1980) have treated migraine headache through biofeedback of the activity of the temporal artery. When this method is used, attempts are made to teach the subjects to reduce the magnitude and/or variability

of the temporal artery vasomotor response.

Friar and Beatty (1976) found significant reduction in headache activity in the treatment group; this group improved more than a control group taught vasomotor control for response in the hand. Adams et al. (1980) reported a series of single case studies of the cephalic vasomotor training. Bild & Adams (1980) conducted a controlled group outcome study comparing cephalic vasomotor training to frontal EMG and to continued headache monitoring. The cephalic vasomotor significantly reduced the headache frequency, yet there was no significant difference at the six week follow up. For headache duration the treatment group showed significantly greater improvement at post treatment than the headache monitoring group, but did not differ significantly from the frontal EMG biofeedback condition.

Psychological methods of treatment offer certain advantages over pharmacological treatment. Although psychological treatments tend to be fairly expensive initially (roughly $300-600 in the fee-for-service market), the maintenance of effects tends to be relatively inexpensive. Potential side effects of medication also reduce the attractiveness of pharmacological methods (e.g., excessive use of acetaminophen is associated with risks of liver damage and potentially life-threatening agranulocytosis; interactions with alcohol can produce harmful consequences). However, few studies have directly compared the efficacy of behavioral and drug treatments.

A review of the literature shows that most psychological treatments of headache leave 40% to 80% in the sample improved, which leaves a substantial number of patients with unmet needs. The availability of two comparably effective behavioral interventions permits us to treat patients who formerly failed with one treatment with the remaining alternative. For example, since they are proven to be about equal, if makes sense to treat a subject that failed relaxation training with biofeedback. There has been little research to improve predictions about who would be likely to respond most favorably to what treatment, therefore it is currently difficult initially to match patients to the treatment that would most likely be optimal for them. Additional research could be of value here.

Outcome Measures

Self-report records yield a headache index score (combines measures of intensity, duration,and frequency) Blanchard, Theobald, Williamson, Silver, & Brown, 1978)

Patients monitor:
headache frequency
headache intensity
headache duration.

Sargent, J., Solbach, P., Coyne, L., Spohn, H., & Segerson, J. (1986). Results of a controlled experimental outcome

study of non-drug treatment for the control of migraine headache. Journal of Behavioral Medicine, 9, 291-323.

Sargent, Solbach, Coyne, Spohn, and Segerson (1986) investigated four types of treatment: No Treatment, Autogenic Phrases, Electromyographic (EMG) Biofeedback, and Thermal Biofeedback. Autogenic Phrases encouraged relaxation throughout the body and an increase in blood flow into the hands. EMG Biofeedback also used autogenic phrases, plus they received EMG feedback from the frontalis area. Thermal Biofeedback received autogenic phrases and received temperature feedback from their right hand. All subjects kept notes on their headaches and symptoms. The three groups who received treatment had the greatest amount of headache reduction. The Thermal training compared to both the EMG and Autogenic Phrases showed a trend towards improvement, whereas the EMG and Autogenic Phrases showed no difference.

Holroyd, K. A., & Penzien, D. B. (1990). Pharmacological versus nonpharmacological prophylaxis of recurrent migraine headache: A meta-analytic review of clinical trials. Pain, 42, 1-13.

Holroyd and Penzien (1990) studied two treatments for recurrent migraines: propranolol and relaxation/ thermal biofeedback training. Propranolol was used solely to help control the headaches when no other prophylactic medication was administered, calculating the percent improvement in the subject. The relaxation/ biofeedback training recorded the skin temperature as well as relaxation training such as muscle relaxation (Andersson, P., & Petersen, E. 1989), training in elicitation of the relaxation response (Albers, G., Simon,, L., Hamik, A., & Peroutka, S. 1989), autogenic training (Gelmers, H. 1983). It was found that both propranolol and relaxation/ biofeedback training had a 43% migraine reduction rate, plus a 20% greater reduction after physician assessment. Allthough both treatments worked equally well, relative cost should have been assessed to determine the better treatment.

Blanchard, E. B., Theobold, D. E., Williamson, D. A., Silver, B. V., & Brown, D. A. (1978). Temperature biofeedback in the treatment of migraine headaches. Archives of General Psychiatry, 35, 581-588.

Blanchard, Theobald, Williamson, Silver, and Brown (1978) compared biofeedback treatment, relaxation training, and a wait-list control in treating migraine headaches. The biofeedback method consisted of fingertip temperature, autogenic training, and home practice (Sargent, Green, & Walters, 1972). The relaxation training method entailed Paul's (1966) version of Jacobson's (1939) method for the progressive relaxation of 16 muscles. According to the results, total headache activity, peak

headache intensity, duration of headache, and reduced intake of medication were all improved through both treatment methods in comparison to the control. All groups exhibited decreased frequency of headache.

The majority of adult patients with headache have tension-induced headache or migraine. However, there are warning signs of more serious etiologies that mandate immediate referral to a physician (US Pharmacy,22(12),1997).
For the full text of this article see:
http://www.medscape.com/Medscape/public/MP/98/0123.html#09

Other Disorders

Gil, K. M., Wilson, J. J., Edens, J. L., Webster, D. A., Abrams, M. A., Orringer, E., Grant, M., Clark, W. C., & Janal, M. N. (1996). The effects of cognitive coping skills training on coping strategies and experimental pain sensitivity in African American adults with sickle cell disease. Health Psychology, 15, 3-10.

Gil, Wilson, Edens, Webster, Abrams, Orringer, Grant, Clark, and Janal (1996) compared cognitive coping skills with a disease-education control in the treatment of pain sensitivity from sickle cell disease. The cognitive method entailed six relaxation and distraction strategies: breathing relaxation, pleasant imagery, counting backward slowly, focusing on physical aspects of surroundings, reinterpreting pain sensations, and calming self-statements (Avia & Kanfer, 1980; Turk, Meichenbaum, & Genest, 1983). This method also required a pressure stimulator experience (Forgione & Barber, 1971; Turk et al., 1983) as well as homework assignments. The disease-education method dealt with the hereditary nature of SCD, the importance of regular health care maintenance, the incidence of painful episodes, the medical treatments for pain, and the consequences of pain (Charache, et al., 1991). The results show that, in relation to the control group, the cognitive coping skills group increased coping attempts, decreased negative thinking, and lowered their tendency to report pain during laboratory stimulation.

O'Brien, S., Ross, L. V., & Christophersen, E. R. (1986). Primary encopresis: Evaluation and treatment. Journal of Applied Behavior Analysis, 19, 137-145.

O'Brien, Ross, and Christophersen (1986) investigated cathartic/behavioral treatments in diurnal and nocturnal primary encopresis in for children. The cathartic and child-time treatment method consisted of initial evacuation of the colon using enemas, toilet-sitting, glycerin suppository use, pants-checks, self-bathing and clothes-washing, wiping training, and dietary recommendations (Christophersen & Rainey, 1977; Wright, 1975). The cathartics, child-time, and punishment treatment

method included much of the above treatment description except that suppositories were no longer used after a soiling episode; instead, punishment procedures were introduced (e.g., practice trials, chair time-out, and required toilet-sits). The results indicated that cathartics and child-time increased the rate of appropriate bowel movements (in 8-11 weeks), only half of the children ceased experiencing soiling accidents. For these two children, appropriate bowel movements were achieved after 32-39 weeks of punishment with suppository fading.

Freedman, R. R., Ianni, P., & Wenig, P. (1983). Behavioral treatment of Raynaud's disease. Journal of Consulting and Clinical Psychology, 51, 539-549.

Freedman, Ianni, and Wenig (1983) compared finger temperature feedback (with and without cold stress) with EMG feedback and autogenic training. Finger temperature feedback entailed the subjects to listen to "a sinusoidal tone whose pitch varied inversely with the temperature of the middle finger of their dominant hand." EMG feedback consisted of subjects hearing "a sinusoidal tone whose pitch varied directly with the amplitude of their frontalis EMG." The autogenic method had subjects listen to instructions and then repeating the phrase "my hands are warm and heavy" for 13 minutes. Results showed that subjects who had finger temperature feedback with and without cold stress showed the greatest increases in temperature without relaxation.

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